

5-CH BTL Driver for DVD Player

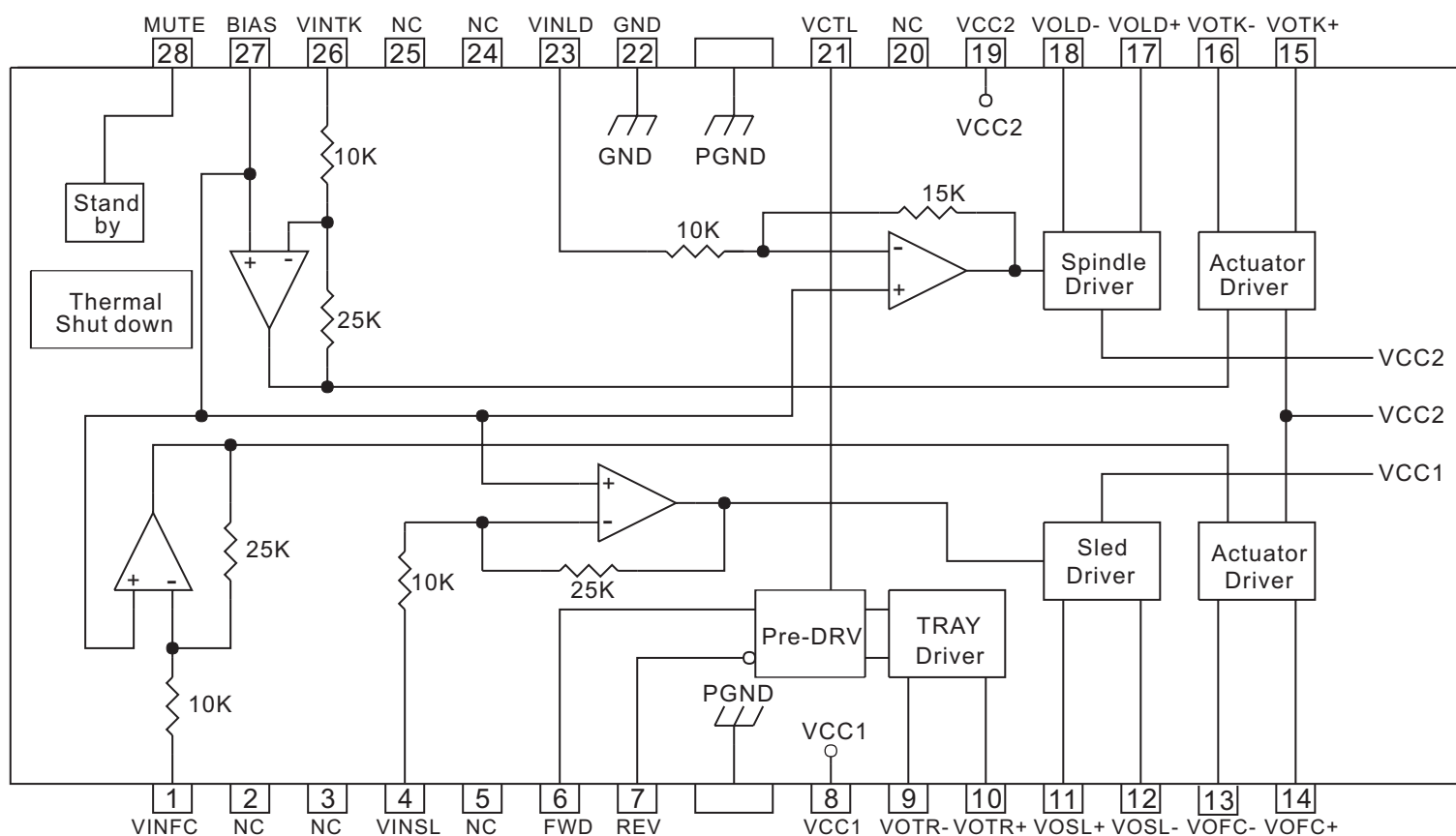
Features

- 2-CH BTL driver
- 2-CH BTL driver with current feedback
- 1-CH forward/reverse control DC motor
- Built-in motor speed control circuit
- Built-in TSD (thermal shut down) circuit
- Built-in mute mode
- Operating supply voltage(4.5V~13.2V)

Descriptions

The CMD4506 is a 5-CH motor driver for CD-p/VCD/DVD systems. It is composed of 2-CH BTL driver, 2-CH driver with current feedback and 1-CH forward/reverse control DC motor driver.

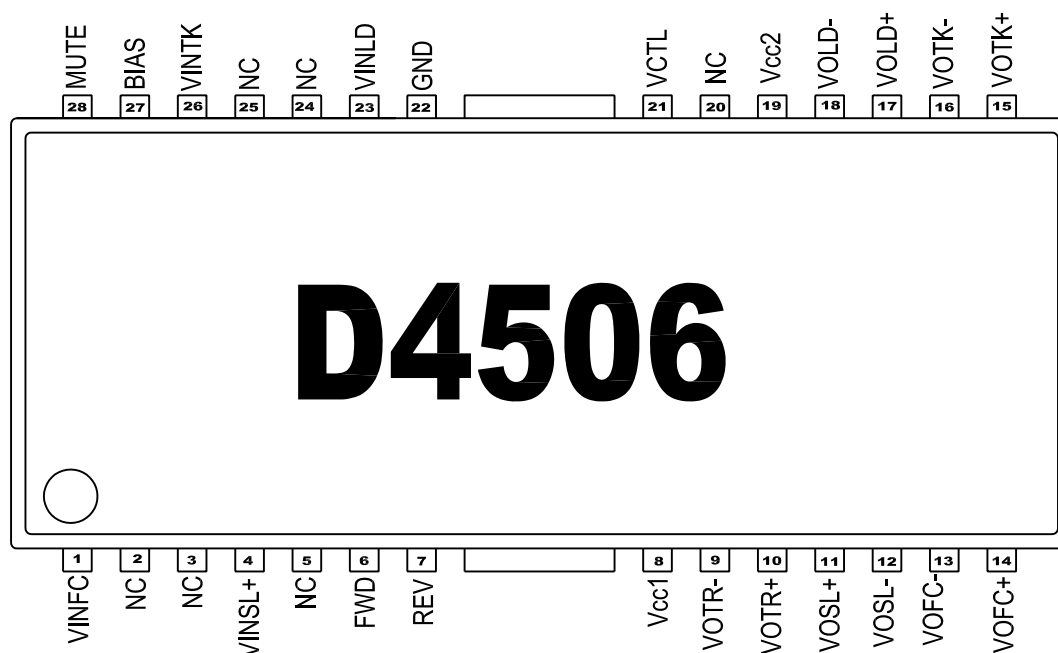
Internal Block Diagram



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Pin Assignments



Pin Definitions

NO	SYMBOL	FUNCTION	NO	SYMBOL	FUNCTION
1	VINFC	Input for focus driver	15	VOTK+	Tracking driver output (+)
2	NC	No connection	16	VOTK-	Tracking driver output (-)
3	NC	No connection	17	VOLD+	Spindle driver output (+)
4	VINSL+	Input for the sled driver	18	VOLD-	Spindle driver output (-)
5	NC	No connection	19	Vcc2	Vcc for power block of spindle, tracking and focus
6	FWD	Tray driver forward input	20	NC	No connection
7	REV	Tray driver reverse input	21	VCTL	Speed control input of tray driver
8	Vcc1	Vcc for pre-drive block and power block of sled and tray	22	GND	Ground
9	VOTR-	Tray driver output (-)	23	VINLD	Input for spindle driver
10	VOTR+	Tray driver output (+)	24	NC	No connection
11	VOSL+	Sled driver output (+)	25	NC	No connection
12	VOSL-	Sled driver output (-)	26	VINTK	Input for tracking driver
13	VOFC-	Focus driver output (-)	27	BIAS	Input for reference voltage
14	VOFC+	Focus driver output (+)	28	MUTE	Input for mute control

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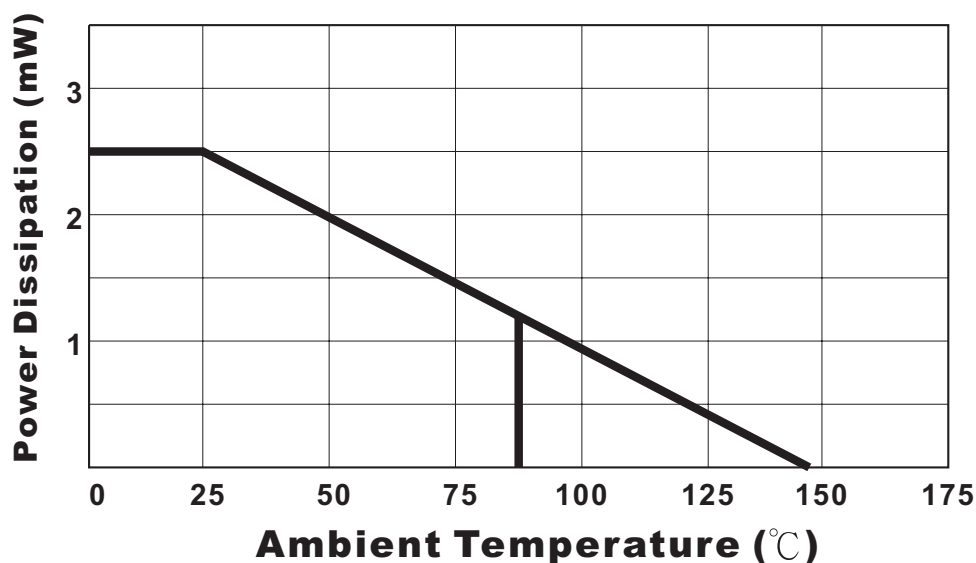
Absolute Maximum Rating($T_a=25^\circ\text{C}$)

CHARACTERISTICS	SYMBOL	LIMITS	UNIT
Supply voltage	Vcc1 Vcc2	13.5	V
Power dissipation	Pd	*1.7	W
Operate Temp range	Topr	-35~+85	
Storage Temp range	Tstg	-55~+150	

Note:

1. When mounted on 50mm x 50mm x 1mm PCB (Phenolic resin material).
2. Power dissipation reduces 20mW/ $^\circ\text{C}$ for using above $T_a=25^\circ\text{C}$.
3. Do not exceed Pd and SOA

Power Dissipation Curve



Recommended Operating Conditions

CHARACTERISTICS	SYMBOL	LIMITS	UNIT
Supply voltage	Vcc1	4.5~13.2	V
	Vcc2	4.5~Vcc1	V

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Electrical Characteristics

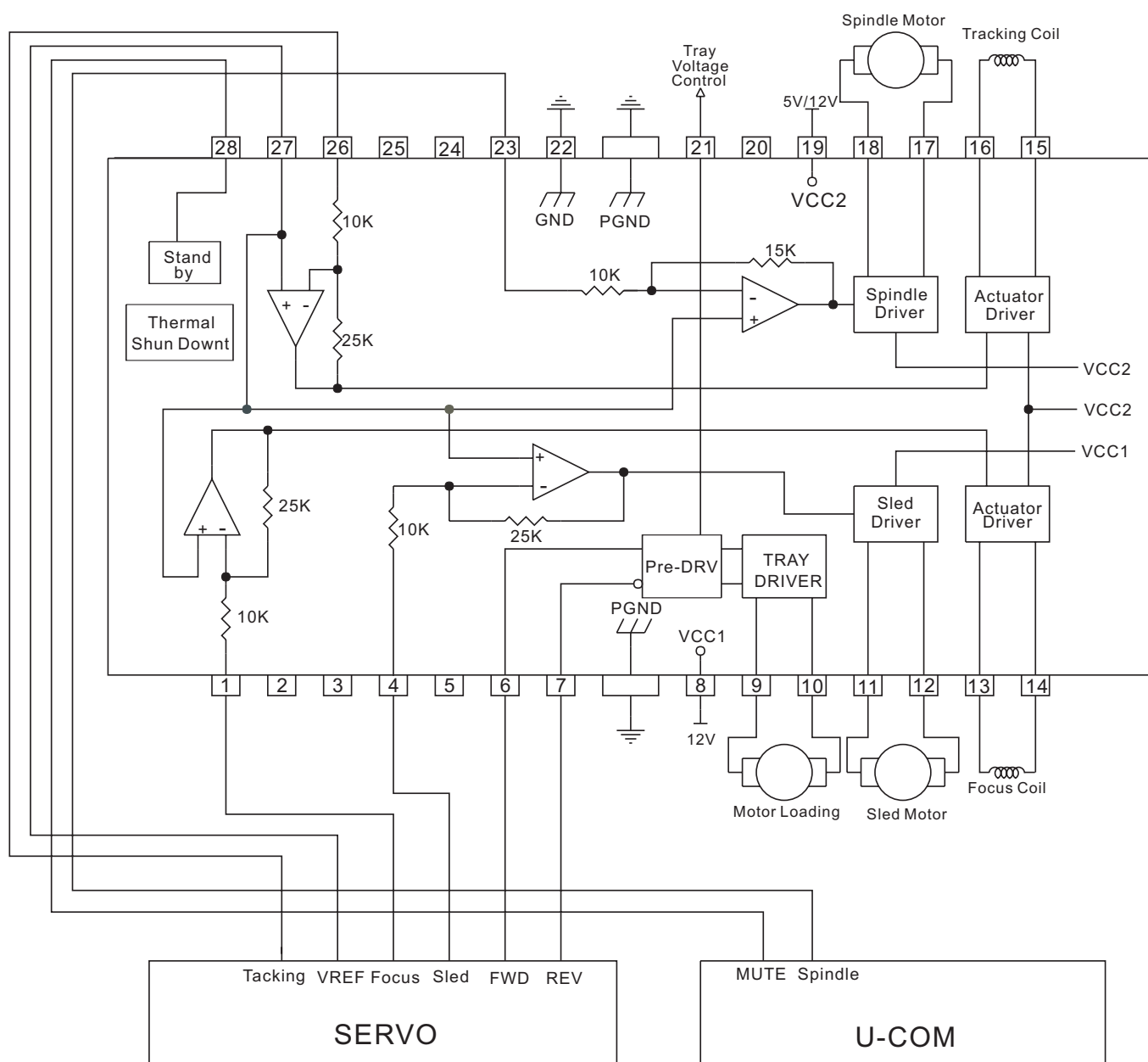
(VCC1=8V, VCC2=5V, BIAS=2.5V, f=1kHz, RL=8Ω, RS=0.5Ω, Ta=25°C unless otherwise specified)

Characteristics	Symbol	Conditions	Limit			Unit
			Min	Typ	Max	
Quiescent current	Icc		-	30	-	mA
Voltage for mute ON	Vston		0	-	0.5	V
Voltage for mute OFF	Vstoffs		2.0	-	5	V
[Actuator Part]						
Output offset voltage	Voo		-	-	±50	mV
Maximum output voltage	Vom	@10Ω Load	3.6	4.0	-	V
Voltage gain	Gv	VIN=BIAS+0.2Vpp ac @1KHz	-	23.5	-	dB
[Sled Part]						
Output offset voltage	Voofsl		-	-	±100	mV
Maximum output voltage	Vomsl	@20Ω Load	7.5	9.0	-	V
Closed loop voltage gain	Gvsl	VIN=BIAS+0.2Vpp ac @1KHz	18	20	22	dB
[Spindle Part]						
Output offset voltage	Voofld		-	-	±50	mV
Maximum output voltage	Vomax	@8Ω Load	-	3.5	-	V
Voltage gain	Gvld	VIN=BIAS+0.2Vpp ac @1KHz	13.3	15.5	17.5	dB
Gain error by polarity	Gvld	VIN=BIAS+0.2Vpp ac @1KHz	0	1	2	dB
[Tray Driver Part]						
Output saturation voltage 1	Vsat1	Upper + Lower saturation, IL=200mA	0.7	1.1	1.5	V
Output saturation voltage between F&R	Vsat1	Output saturation voltage 1 between FWD and REV	-	-	0.1	V
Output saturation voltage 2	Vsat2	Upper + Lower saturation, IL=500mA	1.0	1.55	2.2	V
Output adjustable gain on "H" side voltage	VvtrH	VCTL=2V	7.4	9.2	11	dB
High level input voltage	VIH		1.5	-	Vcc	V
Low level input voltage	VIL		-0.3	-	0.5	V
High level input current	IiH	VFWD=VREV=5V	-	180	270	μA

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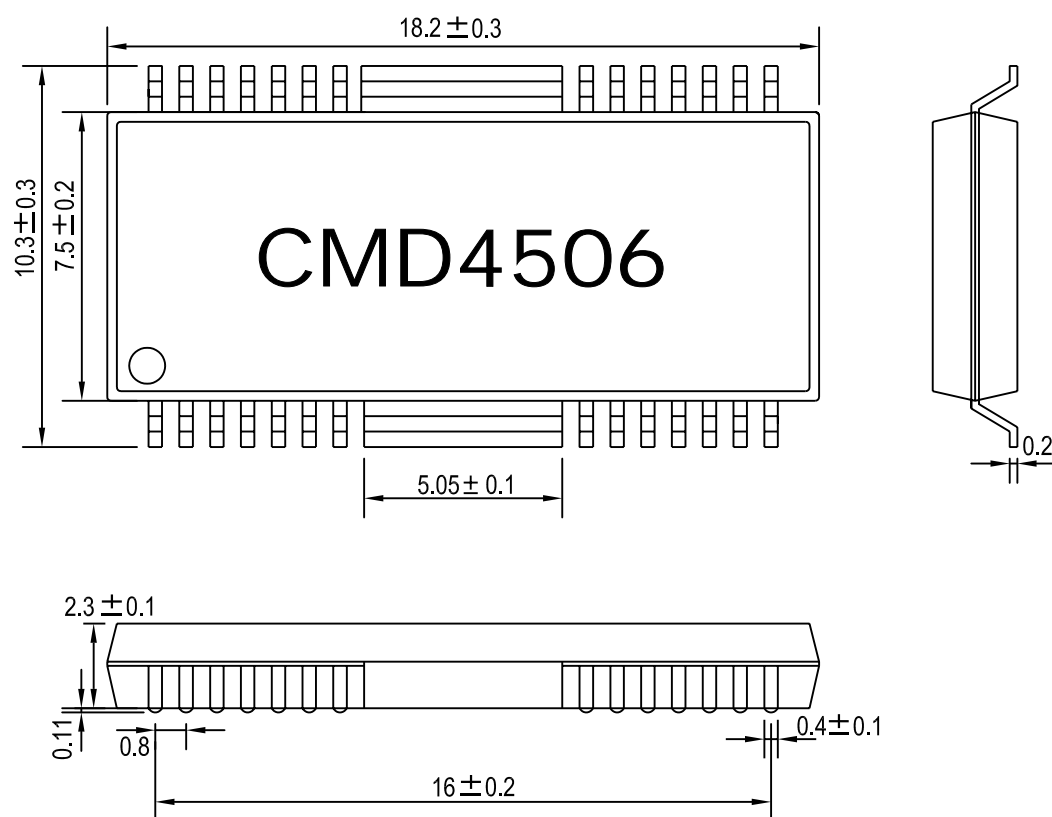
Application Circuit



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Mechanical Dimensions

Package: HSOP-28



Unit: mm

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